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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,004	05/05/2005	Maurizio Corti	2511-1049	1368
466 7590 12/28/2007 YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			EXAMINER COOLEY, CHARLES E	
			ART UNIT 1797	PAPER NUMBER
			MAIL DATE 12/28/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/534,004	Applicant(s) CORTI ET AL.	
	Examiner Charles E. Cooley	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30-33 is/are allowed.
- 6) ☒ Claim(s) 1-7, 11-21 and 26-29 is/are rejected.
- 7) ☒ Claim(s) 8-10 and 22-25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>20050505</u> . | 6) <input type="checkbox"/> Other: _____  |

## **NON-FINAL OFFICE ACTION**

1. This application has been reassigned to Technology Center 1700,  
**DIVISION 7: Art Unit 1797 and the following will apply for this application:**

Please direct all written correspondence with the correct application serial number for this application to **Art Unit 1797**.

Telephone inquiries regarding this application should be directed to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 or to the Examiner at (571) 272-1139. All official facsimiles should be transmitted to the centralized fax receiving number 571-273-8300.

### ***Priority***

2. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d). All of the CERTIFIED copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

### ***Information Disclosure Statement***

3. Note the attached PTO-1449 form submitted with the Information Disclosure Statement filed 5 MAY 2005.

***Specification***

4. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

5. The disclosure is objected to because of the following informalities:

a. the references to the features of particular claims throughout the specification are improper (e.g., see page 5, lines 12-14) because the specification should positively recite the features of the claims rather than inferentially referring to subject matter of a particular claim through incorporation by reference thereto.

Appropriate correction is required.

6. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required. The PCT abstract is not a proper abstract for IFW purposes.

7. The title is acceptable.

***Claim Rejections - 35 U.S.C. § 112, second paragraph***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 12-13, 20, 26, and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 12-13: all references to "the throttling member" lack antecedent basis.

Claim 20 duplicates subject matter of claim 7.

Claim 26 duplicates subject matter of claim 7 such as the chamber 15 and inlet apertures.

Claim 28: "the jumbling chamber" lacks antecedent basis.

The above deficiencies are merely exemplary and all pending claims should each be reviewed and revised using the noted defects as a guide for correction.

### ***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**11. Claims 1, 2, 5-7, 11-21, 26-27, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Schulte et al. (US 4,141,470).**

The patent to by Schulte et al. '470 discloses a method for mixing chemically reactive liquid chemical components 36, 37 in which first 36 and at least a second 37 chemically reactive components are fed under pressure conditions and mixed into a

mixing chamber 19 and/or 28, and in which the resulting mixture is made to flow towards an outlet duct 27; providing an annularly shaped common pressure and feeding chamber 4; feeding metered quantities of the chemical components 36, 37 via metering pumps 34, 35 into the common pressure and feeding chamber 4 subjecting the chemical components at a same pressure condition flowing in an unmixed state toward at least one restriction or orifice 6; and co-injecting the chemical components 36, 37 feed in common, into the mixing chamber through said least one injection orifice 6 causing their intimate mixing by impingement and turbulence; premixing the chemical components by the turbulence of the jet during the co-injection (col. 3, lines 55-60); in which the mixing chamber is provided with a rear open end, and a flow throttling member 18 having a shaped end axially protruding into the rear opening of the mixing chamber to provide said at least one injection orifice 6, wherein the pressure of the common fed chemical components in the common pressure and feeding chamber 4 is changed by adjusting the axial position of the throttling member 18 shaped end in respect to the rear opening of the mixing chamber (col. 2, lines 63-68); post-mixing of the resulting mixture outcoming from the mixing chamber (col. 3, lines 1-6).

The patent to by Schulte et al. '470 also discloses a device for mixing reactive chemical components 36, 37 having a mixing chamber 19 and/or 28 and an outlet duct 27; an annularly shaped common pressure and feeding chamber 4 in fluid communication with said mixing chamber; said common pressure and feeding chamber 4 having inlet apertures 7, 8 for separate feeding of the chemical components 36, 37, at least one injection orifice 6 for co-injection of the chemical components 36, 37 from the

common pressure and feeding chamber 4 into the mixing chamber; a cleaning member 2, 18 axially movable within the mixing chamber; wherein the cleaning member 18 consists of the throttling member with the injection orifice 6; wherein the cleaning and throttling member 2, 18 is movable between an advanced and a retracted position in respect to the mixing chamber, and means 13, 20 for adjusting the axial position of the throttling member and to change the sectional area of the injection orifice 6 at the retracted position of the throttling member; wherein the common pressure and feeding chamber 4 and the mixing chamber are axially aligned (Fig. 1); wherein the mixing chamber in 18 has a cross sectional area smaller than that of the common pressure and feeding chamber 4; downstream/post chambers 19 or 28 or 30; wherein the downstream chamber 19 or 28 or 30 is angularly oriented (any angle), with respect to the chamber 4; wherein the downstream chamber 19 is arranged in a different plane (laterally offset – Fig. 1); the downstream chamber 30 has a cross sectional area larger than that of the upstream chambers and forms an angle within the recited range with respect to the chamber 4; wherein the common pressure and feeding chamber 4 has an annular shape (Fig. 2); a cleaning member 2, axially movable within the common pressure and feeding chamber 4; a body 1 having an elongated hole 3 and a common pressure and feeding chamber 4 for the chemical components 36, 37 in said elongated hole, said common pressure and feeding chamber 4 having inlet apertures 7, 8 for the chemical components; a bush member 18 at the fore end of said elongated hole, said bush member 18 defining a chamber 19; a spool member 2 axially sliding in said feeding chamber 4, operatively connected to a first hydraulic control cylinder 13; the

opposite ends of the bush member 18 and the spool member 2 having reciprocally matching facing flat surfaces that are parallel to each other as seen in Fig. 1.

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**14. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schulte et al. (US 4,141,470) in view of Bauer (US 4,510,120).**

Schulte et al. (US 4,141,470) does not disclose the recited pressures. The patent to Bauer '120 discloses an analogous mixing head for multiple components



wherein the components are injected into a feeding chamber 5 of the mixing head at a pressure of 40 to 200 bar. It would have been obvious and mere common sense to one having ordinary skill in the art, at the time applicant's invention was made, to have provided the injection method of Schulte et al. '470 with a step of injecting the components into the feeding chamber within the recited pressure range as taught by Bauer for the purpose of encouraging mixing at high velocities (col. 5, lines 1-4).

#### ***Allowable Subject Matter***

15. Claim 28 would be allowable if rewritten to overcome the rejection under 35 U.S.C. § 112 and to include all of the limitations of the base claim and any intervening claims.

16. Claims 8, 9, 10, 22, 23, 24, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. Claims 30-33 are allowable over the prior art of record.

#### ***Conclusion***

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The cited prior art discloses mixing heads for mixing injected chemicals.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E. Cooley in Art Unit 1797 whose telephone

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number is (571) 272-1139. The examiner can normally be reached on Mon-Fri. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CEC/  
Charles E. Cooley  
Examiner  
DIVISION 7: Art Unit 1797

24 December 2007